



RAILROAD COMMISSION OF TEXAS

OFFICE OF GENERAL COUNSEL

RULE 37 CASE NO. 0270377
STATUS NO. 693556
DISTRICT 09

**APPLICATION OF CHESAPEAKE OPERATING, INC., FOR A RULE 37 EXCEPTION
FOR THE BEWLEY LEASE, WELL NO. 3H, NEWARK, EAST (BARNETT SHALE)
FIELD, TARRANT COUNTY, TEXAS**

APPEARANCES:

FOR APPLICANT:

Glenn E. Johnson
Erin Rolstad
David C. Triana
Bill G. Spencer
Alan Jackson
Steve Mills

APPLICANT:

Chesapeake Operating, Inc.

FOR PROTESTANT:

Trae Fowler

PROTESTANT:

Trae Fowler

PROPOSAL FOR DECISION

PROCEDURAL HISTORY

DATE APPLICATION FILED:
DATE OF NOTICE OF HEARING:
DATE OF HEARING:
HEARD BY:

August 4, 2011
October 20, 2011
November 16, 2011
Christopher Hotchkiss
Andres J. Trevino
James M. Doherty
November 28, 2011
January 3, 2012
January 24, 2012

PFD PREPARED BY:
DATE TRANSCRIPT RECEIVED:
DATE CASE RE-ASSIGNED:
DATE PFD CIRCULATED:

STATEMENT OF THE CASE

Chesapeake Operating, Inc. (“Chesapeake”) seeks an amended drilling permit pursuant to the provisions of Statewide Rule 37 for the Bewley Lease, Well No. 3H, Newark, East (Barnett Shale) Field, Tarrant County, Texas. The original and two amended permits previously were approved for the Bewley #3H on March 29, 2010, April 19, 2010, and May 23, 2011. The second amended permit approved on May 23, 2011, is the drilling permit currently in effect for the Bewley #3H, and this permit is subject to two no perforation zones (“NPZs”) opposite unleased tracts internal to the Bewley pooled unit. Appendix 1 to this proposal for decision is a plat (Chesapeake Exhibit No. 10) showing the external boundary of the Bewley unit, unleased tracts internal to the unit, and the Bewley #3H. Shown in red near the middle of the horizontal lateral of the Bewley #3H is a 773 foot NPZ opposite unleased Tract No. 410. Shown in purple near the penetration point and upper perforation of the Bewley #3H is a 754 foot NPZ opposite unleased Tract No. 502.

The original purpose of this application was to obtain a third amended permit eliminating the two NPZs from the Bewley #3H so that the entire drainhole from the upper perforation point to the lower perforation point could be perforated. However, for reasons not disclosed in the evidence, notice of this application was not provided to the unleased owner of Tract No. 502. Notice of the application was provided to Trae Fowler, the unleased owner of Tract No. 410, and Mr. Fowler filed a timely protest and appeared at the hearing in opposition to the application. Because of the notice problem affecting Tract No. 502, Chesapeake amended the application at the hearing so as to seek only the removal of the 773 foot NPZ opposite the Fowler Tract No. 410. The 754 foot NPZ around Tract No. 502 will be retained under the application as amended at the hearing.¹ Appendix 2 to this proposal for decision is a revised plat (included in Chesapeake Exhibit No. 2) showing the configuration of the Bewley #3H proposed by the application as amended at the hearing.

The Chesapeake application was heard on November 16, 2011, by Hearings Examiner Christopher Hotchkiss and Technical Examiner Andres J. Trevino. Chesapeake and protestant Trae Fowler appeared and presented evidence and argument. Subsequent to the close of the hearing, Examiner Hotchkiss left the employment of the Commission, and the case was re-assigned to Examiner James M. Doherty for assistance in preparing this proposal for decision.

DISCUSSION OF THE EVIDENCE

Chesapeake

A Rule 37 exception is needed for the Bewley #3H because the section of the well proposed to be perforated is closer than 330 feet to unleased tracts that are internal to the Bewley pooled unit.

¹ Chesapeake says that it will seek to remove the 754 foot NPZ around Tract No. 502 by filing a subsequent application for a further amended permit for the Bewley #3H.

Special field rules for the Newark, East (Barnett Shale) Field provide for 330' lease line spacing. As to horizontal wells, where the horizontal portion of the well is cased and cemented back above the top of the Barnett Shale formation, the distance to any property line, lease line, or subdivision line is calculated based on the distance to the nearest perforation in the well, and not based on the penetration point or terminus. According to the plat associated with the Form W-1 submitted on August 4, 2011, the Fowler Tract No. 410 is, at its closest point, about 82 feet from the Bewley #3H. As of the date of the hearing, there were 12 unleased tracts within the perimeter of the Bewley pooled unit, but only three of these were within 330 feet (not counting Tract No. 502 where a NPZ is being retained). As of the date of the hearing, total acreage in the Bewley pooled unit was 336.241 acres, of which 329.108 acres were leased and 7.133 acres were unleased.

The Bewley #3H location is within Haltom City, Texas. The surface location of the well is off-lease, 956 feet from the east line and 1,319 feet from the north line of the Norris, W. Survey. The penetration point is 1,765 feet from the west line and 330 feet from the southeast line of the Bewley pooled unit. The terminus is 122 feet from the north line and 320 feet from the west line of the Bewley pooled unit and 484 feet from the west line and 1,276 feet from the south line of the Elliston, M. Survey.

A Chesapeake geologist presented an isopach map and a stratigraphic cross section to show thickness of the Barnett Shale in the area of the Bewley Unit. The isopach map was based on information taken from logs for three pilot wells drilled to the north, south, and east of the Bewley Unit. Barnett Shale thickness in the area of the Bewley Unit is shown by the isopach map to be about 335 feet.

A Chesapeake reservoir engineer presented a plot of estimated ultimate recovery versus drainhole length for 635 producing Barnett Shale wells operated by Chesapeake. A computer generated least squares regression of the data points on the plot developed a line through the data points with a positive slope of 0.8449 and an intercept of 965.71. The implication of this plot is that a horizontal well in the Barnett Shale ultimately will recover 0.8449 MMCF, or about 845 MCF, of gas per foot of drainhole plus the plot's intercept of 965.71 MMCF.

Chesapeake's reservoir engineer also volumetrically calculated original gas in place beneath Chesapeake's leased acreage in the Bewley Unit and estimated current recoverable gas beneath the unit assuming a 30% recovery factor. Gas in place beneath the 329.108 leased acres in the Bewley Unit is 71.013 BCF. Chesapeake believes that a 30% recovery factor is reasonable in this area. Assuming a 30% recovery factor, the original recoverable gas beneath the 329.108 leased acres in the Bewley Unit was 21.304 BCF. Chesapeake believes that this is still the recoverable gas in place because there has been no production from the Bewley Unit.

Using the projected recovery predicted by Chesapeake's Exhibit No. 7 plot of estimated ultimate recoveries versus drainhole length for 635 producing Barnett Shale wells, Chesapeake's reservoir engineer also calculated the estimated ultimate recoveries of the Bewley #1H and Bewley

#2H which previously have been permitted on the Bewley Unit. The Bewley #1H will recover an estimated 3.751 BCF of gas and the Bewley #2H will recover an estimated 4.402 BCF. The total estimated recovery of both wells is 8.153 BCF, as compared to current recoverable gas in place beneath the Bewley Unit of 21.304 BCF. Additional wells with drainholes unencumbered by NPZs will be needed to recover the 13.151 BCF that will not be recovered by the Bewley #1H and the Bewley #2H.

Removal of the 773 foot NPZ opposite the Fowler Tract No. 410 would allow 3,602 feet of the Bewley #3H drainhole to be perforated. Based on the projected recovery predicted by Chesapeake's Exhibit No. 7 plot of estimated ultimate recoveries versus drainhole length for 635 producing Barnett Shale wells, perforation of 3,602 feet of drainhole should allow the Bewley #3H ultimately to recover 4,009 MMCF. If the requested Rule 37 exception is denied, and the 773 foot NPZ around the Fowler Tract No. 410 is retained, only 2,829 feet of the Bewley #3H drainhole can be perforated. On the same basis, perforation of 2,829 feet of drainhole would allow the Bewley #3H ultimately to recover only about 3,356 MMCF. Gas that would go unrecovered if the 773 foot NPZ around the Fowler Tract No. 410 were retained amounts to 653 MMCF. There is no other well that would give Chesapeake an opportunity to recover this 653 MMCF.

Chesapeake has already permitted the Bewley #4H and the Bewley #5H, and plans to drill a total of five horizontal wells on the Bewley Unit. The existing permits for the Bewley #4H and Bewley #5H have NPZs, but Chesapeake intends to try to remove these NPZs by obtaining amended permits. Chesapeake will need to be able to perforate the entire drainhole of the Bewley #4H and Bewley #5H in order to recover the current recoverable gas in place beneath the Bewley Unit of 21.304 BCF.

Trae Fowler

Mr. Fowler is the owner of other acreage that has been leased to Chesapeake and included in another unit. He has made a vigorous effort to lease Tract No. 410 within the perimeter of the Bewley Unit to Chesapeake, but believes that he and Chesapeake have reached an impasse. Mr. Fowler says that this is so even though he has backed-off considerably from lease terms he sought originally.

Mr. Fowler requests that the Railroad Commission recognize his property rights. He does not think it is fair that Chesapeake should be able to remove the NPZ that protects his tract without compensating him for the gas that will be drained. Mr. Fowler takes the position that the NPZ should be retained if Chesapeake is not willing to come to terms on an oil and gas lease acceptable to Fowler.

EXAMINERS' OPINION

An owner of oil and gas is entitled to an opportunity to recover the reserves underlying his tract, and any denial of that opportunity amounts to confiscation. *Atlantic Refining Co. v. Railroad Commission*, 346 S.W.2d 801 (Tex. 1961); *Imperial American Resources Fund, Inc. v. Railroad Commission*, 557 S.W.2d 280 (Tex. 1977). When the subject tract is capable of supporting a regular location, the applicant for a Rule 37 exception based on confiscation must prove that the proposed irregular location is necessary because of surface or subsurface conditions and that the proposed location is reasonable. To do this, the applicant must show that it is not feasible to recover its fair share of hydrocarbons from regular locations.

The examiners are of the opinion that Chesapeake proved that the granting of a Rule 37 exception for the Bewley #3H to accomplish the removal of the 773 foot NPZ opposite the Fowler Tract No. 410 is necessary to prevent confiscation. Chesapeake and its lessors within the Bewley Unit are entitled to an opportunity to recover their fair share of gas from the reservoir, and their "fair share" is measured by the current recoverable gas beneath the leased acreage in the Bewley Unit. The evidence shows that the current recoverable gas beneath the 329.108 leased acres in the Bewley Unit is 21.304 BCF. Although there are relatively few tracts within the perimeter of the Bewley Unit that remain unleased, these unleased tracts are scattered throughout the unit at locations which preclude the drilling of horizontal wells with full-length laterals at *regular* locations, unless the laterals are encumbered with no perforation zones. Yet, the evidence shows that even if Chesapeake accomplishes its plan to drill five horizontal wells on the Bewley Unit, Chesapeake cannot recover the current recoverable gas beneath the unit if the wells are required to be encumbered with NPZs around each unleased tract.

The Bewley #3H will be the third horizontal well drilled on the Bewley Unit. The Bewley #1H and Bewley #2H, which previously have been permitted, will have a combined estimated ultimate recovery of 8.153 BCF. Additional Rule 37 wells with drainholes unencumbered by NPZs will be needed to recover the 13.151 BCF of current recoverable gas that will not be recovered by the Bewley #1H and the Bewley #2H. If the Bewley #3H can be perforated along 773 feet of drainhole presently subject to the NPZ opposite the Fowler Tract No. 410, the well will have an estimated ultimate recovery of about 4,009 MMCF. If the requested Rule 37 exception is denied and the 773 foot NPZ around the Fowler Tract No. 410 remains in place, the well will have an estimated ultimate recovery of 3,356 MMCF. This means that 653 MMCF that could be recovered by the Bewley #3H will remain unrecovered. There is no other well that would give Chesapeake an opportunity to recover this 653 MMCF.

Chesapeake presented plats showing the proposed locations of the Bewley #4H and Bewley #5H which have been permitted at locations to the west of the Bewley #3H location. It may be concluded from these plats and the horizontal well recoveries predicted by Chesapeake's Exhibit No. 7 plot of estimated ultimate recoveries versus drainhole length for 635 producing Barnett Shale wells that even if Chesapeake is able to drill full-length drainholes unencumbered by NPZs for the Bewley

#4H and Bewley #5H, Chesapeake will not be able to recover its fair share of gas from the reservoir if the 773 foot NPZ around the Fowler Tract No. 410 remains in place on the Bewley #3H.

The examiners have considered the correlative rights of Trae Fowler associated with his mineral interest in the 0.992-acre Tract No. 410, which appears to be about 82 feet from the Bewley #3H at its closest point. However, Mr. Fowler's correlative rights must be weighed against the correlative rights of hundreds of surrounding mineral owners who have agreed to lease to Chesapeake and be pooled into the Bewley Unit. Leaving 653 MMCF of gas unrecovered by the Bewley #3H is not a practical solution from either perspective. There is no evidence in the record as to the precise amount of recoverable gas beneath Mr. Fowler's 0.992-acre tract, but it must be assumed that it is only a fraction of the 653 MMCF of gas that would go unrecovered if the 773 foot NPZ around the Fowler Tract No. 410 remains in place.

The evidence shows that Chesapeake has attempted to lease Mr. Fowler's tract. There may still be a chance that Mr. Fowler and Chesapeake can reach an agreement for the lease of Mr. Fowler's minerals. Mr. Fowler has the right *not* to lease if he is dissatisfied with the terms offered by Chesapeake, but the decision not to lease has consequences that the Commission has no authority to address. The Commission has no authority to order the parties to enter into a private agreement relating to oil and gas property or to condition disposition of a Rule 37 application on the making of any such private agreement.

The examiners are of the opinion that the location of the Bewley #3H is reasonable. There is no regular location on the unit where a comparable horizontal well, unencumbered by no perforation zone restrictions, might be drilled. There is no less irregular location that would be more reasonable or that would afford Chesapeake an opportunity to recover its fair share of gas. The Bewley #3H is reasonably located taking into account the between well spacing that must be observed in order to avoid interference with other horizontal wells that have been permitted and will be drilled on the unit.

Based on the record in this case, the examiners recommend adoption of the following Findings of Fact and Conclusions of Law.

FINDINGS OF FACT

1. At least ten (10) days notice of this hearing was provided to all affected persons as defined by Statewide Rule 37(a)(2) and 37(a)(3) and the special field rules for the Newark, East (Barnett Shale) Field.
2. Chesapeake Operating, Inc. ("Chesapeake") seeks an exception to Statewide Rule 37 for the Bewley Lease, Well No. 3H, Newark, East (Barnett Shale) Field, Tarrant County, Texas.

3. The second amended permit approved on May 23, 2011, is the drilling permit currently in effect for the Bewley #3H, and this permit is subject to two no perforation zones ("NPZs") opposite unleased tracts internal to the Bewley pooled unit, a 773 foot NPZ around Tract No. 410 and a 754 foot NPZ around Tract No. 502.
4. Although the original purpose of the present application was to eliminate both NPZs from the Bewley #3H, notice of the application inadvertently was not provided to the owner of the minerals under Tract No. 502. Consequently, this application was amended at the hearing to propose the elimination of the NPZ around Tract No. 410 only. Chesapeake will seek elimination of the NPZ around Tract No. 502 by a subsequent application.
5. Special field rules for the Newark, East (Barnett Shale) Field provide for 330 foot lease line spacing. As to horizontal wells, where the horizontal portion of the well is cased and cemented back above the top of the Barnett Shale formation, the distance to any property line, lease line, or subdivision line is calculated based on the distance to the nearest perforation in the well, and not based on the penetration point or terminus.
6. Tract No. 410 is, at its closest point, about 82 feet from the Bewley #3H. As of the date of the hearing, there were 12 unleased tracts within the perimeter of the Bewley pooled unit, but only three of these were within 330 feet (not counting Tract No. 502 where a NPZ is being retained). As of the date of the hearing, total acreage in the Bewley pooled unit was 336.241 acres, of which 329.108 acres were leased and 7.133 acres were unleased.
7. The Bewley #3H location is within Haltom City, Texas. The surface location of the well is off-lease, 956 feet from the east line and 1,319 feet from the north line of the Norris, W. Survey. The penetration point is 1,765 feet from the west line and 330 feet from the southeast line of the Bewley pooled unit. The terminus is 122 feet from the north line and 320 feet from the west line of the Bewley pooled unit and 484 feet from the west line and 1,276 feet from the south line of the Elliston, M. Survey.
8. As demonstrated by an isopach map and a stratigraphic cross section presented at the hearing, Barnett Shale thickness in the area of the Bewley Unit is about 335 feet.
9. A Chesapeake reservoir engineer presented a plot of estimated ultimate recovery versus drainhole length for 635 producing Barnett Shale wells operated by Chesapeake ("Exhibit 7 plot"). A computer generated least squares regression of the data points on the plot developed a line through the data points with a positive slope of 0.8449 and an intercept of 965.71. This plot predicts that a horizontal well in the Barnett Shale ultimately will recover 0.8449 MMCF, or about 845 MCF, of gas per foot of drainhole plus the plot's intercept of 965.71 MMCF.
10. Volumetrically calculated gas in place beneath the 329.108 leased acres in the Bewley Unit is 71.013 BCF. Chesapeake believes that a 30% recovery factor is reasonable in this area. Assuming a 30% recovery factor, the original recoverable gas beneath the 329.108 leased

acres in the Bewley Unit was 21.304 BCF. This is still the recoverable gas in place because there has been no production from the Bewley Unit.

11. Wells previously permitted by Chesapeake on the Bewley Unit are not sufficient to enable Chesapeake to recover its fair share of gas from beneath the Bewley Unit.
 - a. The Bewley #3H will be the third horizontal well drilled on the Bewley Unit. The Bewley #1H and Bewley #2H previously have been permitted on the same Unit.
 - b. Using the recovery predicted by Chesapeake's Exhibit No. 7 plot, the Bewley #1H will recover an estimated 3.751 BCF of gas and the Bewley #2H will recover an estimated 4.402 BCF. The total estimated recovery of both wells is 8.153 BCF, as compared to current recoverable gas in place beneath the Bewley Unit of 21.304 BCF.
 - c. Additional wells with drainholes unencumbered by NPZs will be needed to recover the 13.151 BCF of current recoverable gas that will not be recovered by the Bewley #1H and the Bewley #2H.
12. Retention of the 773 foot NPZ around Tract No. 410 on the Bewley #3H will preclude an opportunity to Chesapeake to recover its fair share of gas from beneath the Bewley Unit.
 - a. Removal of the 773 foot NPZ opposite the Fowler Tract No. 410 would allow 3,602 feet of the Bewley #3H drainhole to be perforated.
 - b. Based on the projected recovery predicted by Chesapeake's Exhibit No. 7 plot, perforation of 3,602 feet of drainhole should allow the Bewley #3H ultimately to recover 4,009 MMCF.
 - c. If the requested Rule 37 exception is denied, and the 773 foot NPZ around the Fowler Tract No. 410 is retained, only 2,829 feet of the Bewley #3H drainhole can be perforated.
 - d. On the same basis, perforation of 2,829 feet of drainhole would allow the Bewley #3H ultimately to recover only about 3,356 MMCF.
 - e. Gas that would go unrecovered if the 773 foot NPZ around the Fowler Tract No. 410 were retained amounts to 653 MMCF.
 - f. There is no other well that would give Chesapeake an opportunity to recover this 653 MMCF.
13. Chesapeake plans to drill five horizontal wells on the Bewley Unit, including the Bewley #4H and Bewley #5H which previously have been permitted to the west of the Bewley #3H

location. Even if Chesapeake is able to drill full-length drainholes unencumbered by NPZs for the Bewley #4H and Bewley #5H, Chesapeake will not be able to recover its fair share of gas from the reservoir if the 773 foot NPZ around the Fowler Tract No. 410 remains in place on the Bewley #3H.

14. The location of the Bewley #3H is reasonable.
 - a. There is no regular location on the unit where a comparable horizontal well, unencumbered by no perforation zone restrictions, might be drilled.
 - b. There is no less irregular location that would be more reasonable or that would afford Chesapeake an opportunity to recover its fair share of gas.
 - c. The Bewley #3H is reasonably located taking into account the between well spacing that must be observed in order to avoid interference with other horizontal wells that have been permitted and will be drilled on the unit.

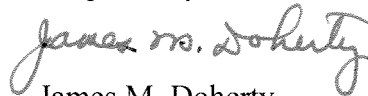
CONCLUSIONS OF LAW

1. Proper notice of hearing was timely issued by the Railroad Commission to appropriate persons legally entitled to notice.
2. All things necessary to the Commission attaining jurisdiction over the subject matter and the parties in this hearing have been performed.
3. Approval of a Rule 37 exception for the Bewley Lease, Well No. 3H, Newark, East (Barnett Shale) Field, Tarrant County, Texas, is necessary to prevent confiscation and protect the correlative rights of mineral owners.

RECOMMENDATION

The examiners recommend that the application of Chesapeake Operating, Inc., for a Rule 37 exception for the Bewley Lease, Well No. 3H in the Newark, East (Barnett Shale) Field, Tarrant County, Texas, be granted as necessary to prevent confiscation and protect correlative rights.

Respectfully submitted,



James M. Doherty
Hearings Examiner



Andres J. Trevino
Technical Examiner